Battlespace Awareness and Information Dominance Support Contract
Performance Work Statement

SPECIFICATIONS

Work under this contract shall be performed in accordance with the following Performance Work Statement (PWS):

1.0 PURPOSE

1.1 BACKGROUND

SPAWAR Systems Center Atlantic (SSC Atlantic) is a Department of the Navy organization with a mission to rapidly deliver and support solutions that enable information dominance for our Naval, Joint, National and Coalition Warfighters. SSC Atlantic meets our nation's demands for uninterrupted vigilance, fail-safe cyber security, adaptive response and engineering excellence by delivering secure, integrated and innovative solutions to many naval, joint and national agencies.

SSC Atlantic is honored to serve naval, joint and national warfighters' unified efforts to best cope with the dangers of the 21st century and beyond by enabling them to respond to any situation, anywhere, at any time. SSC Atlantic conducts research, designs, acquires, engineers and sustains the systems, sensor connections, cyber network infrastructures and knowledge management services to ensure reliable information is available to only those who need it, where and when it is needed.

1.2 SCOPE

The scope of this contract covers the entire spectrum of non-inherently governmental services and solutions (equipment and services) associated with the full system lifecycle support including research, development, test, evaluation, production and fielding of sustainable, secure, survivable, and interoperable Command, Control, Communications, Computers, Combat Systems, Intelligence, Surveillance, Reconnaissance (C5ISR), Information Operations, Enterprise Information Services (EIS) and Space capabilities. Although not limited beyond the description above, this contract has a primary focus on mission capabilities within the Battle-space Awareness (BA) Portfolio.

NOTE: As specified at task order level, work may be performed at locations worldwide including Iraq, Afghanistan, Kuwait, and/or Pakistan.

1.2.1 Portfolio Description
The Battle-space Awareness (BA) Portfolio includes engineering, development, and engineering services for those systems and organizations that observe (adversary) activity, collect data, and process it into information and intelligence. It also includes those systems that deny and deceive our adversary's ability to do the same. It encompasses capabilities to observe and interact with the physical domain and the data acquisition and processing capabilities required to bring this observation and interaction into the digital world (cyber domain). It includes the development of autonomous and unmanned systems and platforms and the integration of observation, processing, and information operations capabilities into these systems. BA includes the development, integration, and test of intelligence, battlespace awareness, and information operations (IO) applications and dedicated hardware. It also includes the integration and test of systems of systems focused on the delivery of battlespace awareness, and intelligence capabilities and systems as well as the integrated employment of IO capabilities. It includes the integration and interfacing of these capabilities into the transport and computing infrastructure. BA is understood to include: BA applications, BA dedicated hardware, Applications integration, BA Applications testing, integration into the common computing environment, Information Superiority (ISR applications, METOC applications, application dedicated hardware, integration into common computing environment), IO Pillars Applications, Integrated IO, capabilities to achieve effects, ISR/IO/Ocean Observation (Physical environment capabilities, observation (INTs), data acquisition, processing, Space situational awareness and dedicated hardware).

1.2.2 Representative Projects and Sponsors
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Projects within the Battle-space Awareness Portfolio include both manned and unmanned systems design and development in each of the five domains: air, space, land, maritime (surface and sub-surface), and distributed sensor networks. Representative BA projects include:

- **Navy Projects:**
  - Ships Signals Exploitation Equipment (SSEE) Increments E/F
  - Cryptologic Carry-On Program (CCOP)
  - Automated Identification System (AIS) In-Service Engineering Activity
  - EP-3 Special Collection Add-On System (SCAS)
  - Distributed Common Ground System – Navy (DCGS-N)
  - Navy Maritime Domain Awareness (MDA)

- **Marine Corps Projects:**
  - Team Portable Collection System – Multi System Platform Capable (TPCS-MPC)
  - Communication and Emitter Sensing and Attack Systems (CESAS)
  - AN/MLQ-36 (B) Mobile Electronic Warfare Support System (MEWSS)

- **Army Projects:**
  - Project Triton

- **Joint Projects:**
  - Joint Threat Warning System (JTWS)
  - RealWorld
  - System Programming Application for Distributed Environments (SPADES)

Current and future sponsors supported within the BA Portfolio include, but are not limited to: PEO-C4I (PMW-120), PEO-LMW, PEO-U&W NAVSEA, NAVAIR, NRO, NSA, DIA, DTRA, OSD, ODNI, OPNAV N2/N6, DARPA, NRL, MARCORSYSCOM, SOCOM, CENTCOM, Joint Staff Extension (formerly JFCOM), PACOM, EUCOM, FLTCYBERCOM/10th Fleet, NIOC Suitland, U.S. Air Force, and U.S. Army.

2.0 APPLICABLE DOCUMENTS

All work shall be accomplished using the best commercial practices and current acceptable industry standards. The applicable references and standards invoked will vary within individual tasks and will be specifically called-out in each task order. In accordance with Defense Acquisition Policy changes, maximum utilization of non-governmental standards will be made wherever practical. Where backward compatibility with existing systems is required, selected interoperability standards will be invoked. For purposes of bidding, the following documents are not exclusive; however, all contractors shall be able to meet those cited when applicable to the task order.

2.1 REQUIRED DOCUMENTS

The following documents are mandatory for use. Unless otherwise specified, the document’s effective date of issue is the date on the request for proposal. Additional applicable documents may be included in specific task orders.

<table>
<thead>
<tr>
<th>Document Number</th>
<th>Title</th>
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<tbody>
<tr>
<td>a. DoD 5200.2-R</td>
<td>DoD Regulation – Personnel Security Program</td>
</tr>
<tr>
<td>c. DoDI 8420.01</td>
<td>DoD Instruction – Commercial Wireless Local-Area Network (WLAN) Devices, Systems, and Technologies</td>
</tr>
<tr>
<td>d. DoDD 8500.1</td>
<td>DoD Directive – Information Assurance</td>
</tr>
<tr>
<td>e. DoDI 8500.2</td>
<td>DoD Instruction – Information Assurance (IA) Implementation</td>
</tr>
<tr>
<td>f. DoDI 8510.01</td>
<td>DoD Instruction – Information Assurance Certification and Accreditation Process</td>
</tr>
<tr>
<td>g. DoDD 8570.01</td>
<td>DoD Directive – Information Assurance Training, Certification, and Workforce Management</td>
</tr>
</tbody>
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2.2 GUIDANCE DOCUMENTS

The following documents are to be used as guidance. Unless otherwise specified, the document’s effective date of issue is the date on the request for proposal. Additional applicable documents may be included in specific task orders.

<table>
<thead>
<tr>
<th>Document Number</th>
<th>Title</th>
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<tbody>
<tr>
<td>a. MIL-M-85337A</td>
<td>Manuals, Technical; Quality Assurance Program: Requirements for</td>
</tr>
<tr>
<td>b. MIL-DTL-24784</td>
<td>Manuals, Technical: General Acquisition And Development Requirements</td>
</tr>
<tr>
<td>c. MIL-HDBK-61A</td>
<td>Configuration Management</td>
</tr>
<tr>
<td>d. MIL-HDBK-881A</td>
<td>Work Breakdown Structure</td>
</tr>
<tr>
<td>e. ANSI/EIA-748A</td>
<td>American National Standards Institute/Electronic Industries Alliance Standard – Earned Value Management (EVM) System</td>
</tr>
<tr>
<td>f. ISO/IEC -9000</td>
<td>International Organization for Standardization, Quality Management Principles</td>
</tr>
<tr>
<td>g. ISO/IEC 12207</td>
<td>Information Technology – Software Life Cycle Processes (provides common framework for developing and managing software)</td>
</tr>
<tr>
<td>h. ISO/IEC 15288</td>
<td>Systems Engineering – System Life Cycle Processes</td>
</tr>
<tr>
<td>i. ISO/IEC 15939</td>
<td>Software Engineering – Software Measurement Process</td>
</tr>
<tr>
<td>j. ISO/IEC 14764</td>
<td>Information Technology – Software Maintenance</td>
</tr>
<tr>
<td>m. IEEE 802.11i-2004</td>
<td>IEEE Standard for Information Technology- Telecommunications and Information Exchange Between Systems- Local and Metropolitan Area Networks- Specific Requirements Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications Amendment 6: Medium Access Control (MAC) Security Enhancements</td>
</tr>
<tr>
<td>n. OSHA Standards</td>
<td>Occupational Safety and Health Act (OSHA) Standard 29 CFR 1910 (general), 1915 (shipboard/submarine) and 1926 (shore)</td>
</tr>
</tbody>
</table>
2.3 SOURCE OF DOCUMENTS

Copies of Federal Specifications may be obtained from General Services Administration Offices in Washington, DC, Seattle, San Francisco, Denver, Kansas City, MO., Chicago, Atlanta, New York, Boston, Dallas and Los Angeles.

Copies of military specifications may be obtained from the Commanding Officer, Naval Supply Depot, 3801 Tabor Avenue, Philadelphia, PA 19120-5099. Application for copies of other Military Documents should be addressed to Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Ave., Philadelphia, VA 19120-5099.

All other commercial and industrial documents can be obtained through the respective organization’s website.

3.0 PERFORMANCE REQUIREMENTS

3.1 TECHNICAL AND PROGRAM MANAGEMENT SUPPORT

The contractor shall apply business, financial management, and technical disciplines required to support planning, organizing, staffing, controlling, and leading team efforts in managing acquisition programs and projects such that the result places capable and supportable systems in the hands of the warfighter when and where needed, and at an affordable price. This functional area represents an integration of a complex system of differing but related functional disciplines that must work together to achieve program goals through development, production, deployment, operations, support, and disposal. Program support may require significant coordination and interface with various DoD and non-DoD activities located in and out of CONUS.

3.2 RESEARCH AND DEVELOPMENT SUPPORT

The contractor shall support the development and application of scientific and analytical disciplines to conduct fundamental research; scientific study and experimentation directed toward advancing the state-of-the-art or increasing knowledge or understanding; concept formulation; assessment of system and subsystem requirements; development, analysis and evaluation of concepts, technologies, systems and subsystems; and development of
operational concepts and tactics with the end goal being the application of results to developing new or improving existing C5ISR and IT capabilities. This effort may include manning, operating, and maintaining test support and experimental platforms to support tests.

3.3 DESIGN, DEVELOPMENT, INTEGRATION AND SYSTEMS ENGINEERING SUPPORT

The contractor shall perform engineering disciplines for the development of new and existing C5ISR and IT capabilities and systems, development of significant alterations to existing systems, integration and interface of existing equipment or software into different applications or platforms to support the warfighter, and evaluation of foreign or non-developmental systems, equipment, and technologies. This shall include performance of scientific analytical and engineering efforts necessary to transform operational needs into unique system performance parameters for evolution into improved system capabilities. This functional area also includes all support required within the area of environmental engineering of C5ISR and IT systems and related infrastructure.

3.4 ARCHITECTURE DEVELOPMENT SUPPORT

The contractor shall apply engineering, scientific analytical disciplines to assist in the identification and creation of analysis artifacts, in support of acquisition and engineering processes identify key end-to-end performance requirements, derive measures of effectiveness and measures of performance to be validated and verified by test procedures for C5ISR and IT systems. Analysis results shall be documented using applicable framework, such as, Department of Defense Architecture Framework (DoDAF) viewpoints or Federal Enterprise Architecture viewpoints, as applicable.

3.5 ENTERPRISE ANALYSIS AND ASSESSMENTS SUPPORT

The contractor shall apply engineering, scientific analytical disciplines to identify, refine and document operational and functional requirements; translate operational and functional requirements to Concepts of Operations (CONOPS), Functional Requirements, Functional Descriptions and Operational Requirements Documentation such as Capability Development Document (CDD), Capability Production Document (CPD), etc.; develop system, subsystem and component level design specifications and documents; and develop System performance documents, specifications, and interface requirements documents.

3.6 MODELING, SIMULATION, STIMULATION, AND ANALYSIS SUPPORT

The contractor shall apply standardized, rigorous, structured methodology to create and validate a physical, mathematical, or otherwise logical representation of a system, entity, phenomenon, or process. The functional area involves the use of models, including emulators, prototypes, simulators, and stimulators, either statically or over time, to develop data as a basis for making managerial, technical, strategic, or tactical decisions.

3.7 HUMAN SYSTEMS INTEGRATION, PERFORMANCE, AND USABILITY ENGINEERING SUPPORT

The contractor shall apply engineering, scientific, and analytical disciplines to ensure that design of interactive systems are safer, more secure and easier to use thereby reducing accidents due to human error, increasing system integrity and enabling more efficient process operations. This functional area also includes applying engineering, scientific, and analytical disciplines to ensure that the number, type, mix, knowledge, skills, and abilities (KSAs), aptitudes and physical characteristics of operators, maintainers and support personnel have been defined and documented early in the system design phase. This includes the preparation and maintenance of Human Engineering Program Plans and Human Engineering Detailed Equipment Performance Specifications and performance Human Factors Assessments for C5ISR and IT systems. In accordance with DFAR 235.072(e), the contractor shall comply with clause 252.235-7004, Protection of Human Subjects when performing research involving human subjects that is covered under 32 CFR Part 219.
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3.8 INTEROPERABILITY, TEST AND EVALUATION, TRIALS AND INSTALLATION CHECKOUT SUPPORT

The contractor shall perform and/or apply engineering, scientific analytical disciplines and the development of all necessary test documentation, plans, change requests, specifications and reports to ensure that developed platforms, C5ISR and IT systems, and war-fighting capabilities have been properly tested and that joint interoperability requirements have been fully met at all levels of its life cycle; including the support of measurement facilities, ranges and instrumentation used for testing, evaluating, experimenting, and exercising platforms and systems. This includes Intra-DoD, Inter-Government, and International interoperability studies as well as multi-platform integration studies of various C5ISR and IT systems. Included in this task, the contractor shall perform Independent Verification and Validation (IV&V) Support services.

3.9 SOFTWARE ENGINEERING, DEVELOPMENT, AND PROGRAMMING SUPPORT

The contractor shall apply engineering, security, and scientific disciplines to perform technical analysis of, technically support development of or selection of hardware and computer software, or modification to existing hardware and software for systems, test facilities, or training facilities. This also consists of software engineering efforts and programming support required to technically support software implementation in systems, sub-systems, and components utilizing computers, electronics, and software. Planning, designing, coding, testing, integrating, supporting, and delivering algorithms, software (source code and executables), computer programs are the inherent activities of this functional area. Commercial Off-The-Shelf (COTS) solutions and product modifications (e.g., software tools, licensing, and associated hardware) which are incidental to the overall support service efforts are considered within the scope of this functional area. At the task order level, specific technical approaches and process management assessments to software development shall be required.

3.9.1 Software Development Plan (SDP)
The contractor shall define a software development approach appropriate for the computer software effort to be performed under each task. The approach shall be documented in a Software Development Plan (SDP) (CDRL A001). The contractor shall follow this SDP for all computer software to be developed or maintained under this effort. At a minimum, the SDP shall meet the following criteria:

3.9.1.1 When required at task order level, the SDP shall be initially delivered to the Government no later than (NLT) 30 days after task order award but no later than commencement of software activity. No specific format is required; the document is content driven. Subject to review, the SDP shall be placed under configuration control after it has been approved by the Government. The document shall be resubmitted for review and Government approval when periodic updates are performed subsequent to process improvement reviews.

3.9.1.2 The SDP shall document all System Life Cycle Processes applicable to the system to be acquired, as defined by IEEE Std. 12207 – 2008 as appropriate.

3.9.1.3 The SDP shall define the offeror’s proposed life cycle model and the processes used as a part of that model. In this context, the term “System Life Cycle Processes” is as defined in IEEE Std. 12207 - 2008. The SDP shall describe the System Life Cycle Processes applicable to the system to be acquired based on the work content of this solicitation. In accordance with the framework defined in IEEE Std. 12207 - 2008, the SDP shall define the processes, the activities to be performed as a part of the processes, the tasks which support the activities, and the techniques and tools to be used to perform the tasks. Because IEEE Std. 12207 – 2008 does not prescribe how to accomplish the task, the offeror must provide this detailed information so the Government can assess whether the offeror’s approach is viable.

3.9.1.4 The SDP shall contain the information defined by IEEE/EIA Std. 12207.1, section 5.2 (generic content) and the Plans or Procedures in Table 1 of IEEE/EIA Std. 12207.1. The content of the SDP shall be tailored to contain only the information and sections that are applicable to the tasks defined in the task order. If any information item is not relevant to either the system or to the proposed process, that item is not required.
3.9.1.5 The SDP shall adhere to the characteristics defined in section 4.2.3 of IEEE/EIA Std. 12207.1, as appropriate. In all cases, the level of detail shall be sufficient to define all software development processes, activities, and tasks to be conducted which will allow the use of the SDP as the full guidance for the developers. In accordance with section 6.5.3b of IEEE/EIA Std. 12207.1, information provided must include, as minimum, specific standards, methods, tools, actions, reuse strategies, and responsibilities associated with development and qualification including safety and security.

3.10 PROTOTYPING, PRODUCTION, MODEL-MAKING, AND FABRICATION SUPPORT

The contractor shall support the building, production, fabrication, testing, evaluation and operation of reduced and full-scale models, mock-ups, prototypes, production units and research and development (R&D) test tools of electronic and electro-mechanical systems and system elements. Fabrication and manufacturing of replacement parts/equipments for fielded systems or platforms is included under this task. Additional support includes the development of hardware system/prototypes that demonstrates potential design solutions to operational and functional requirements for C^ISR and IT systems. Also included is the performance of systems hardware and software integration and testing, to ensure total operational and functional compatibility with interfacing/interacting systems, subsystems, equipment, and computer programs. The use of traditional materials as well as new composite materials is considered applicable in this task.

3.11 INSTALLATION AND IN-SERVICE ENGINEERING SUPPORT

The contractor shall apply engineering, analytical, and technical disciplines and skills to establish and maintain long-term engineering, operation, and maintenance support for in-service C^ISR and IT capabilities as well as the capability to modernize or introduce transformational technologies into those capabilities. This includes the installation in accordance with paragraph 6.2.2 of this document for shipboard work and SPAWAR Shore Installation Process Handbook for shore work, and delivery of systems, including the development of installation and integration plans, drawings, technical change documentation and notices and procedures in support of these efforts. Included in this task is site/platform support liaison and help desk support as required.

3.12 INFORMATION ASSURANCE (IA) SUPPORT

The contractor shall perform and/or apply engineering, analytical, and technical disciplines and skills to protect and defend information and information systems by ensuring its availability, integrity, authentication, confidentiality, and non-repudiation. This support includes providing for restoration of information systems by incorporating protection, detection, and reaction capabilities. Using NSA's IA Technical Framework (IATF) as guidance, the contractor shall provide Information Assurance engineering and technical support in developing, analyzing, and implementing security requirements. The contractor shall also ensure any equipment/system installed or integrated into Navy platform shall meet the IA requirements as specified under DoDI 8500.2 and DoDD 8570.01.

3.13 INTEGRATED LOGISTICS SUPPORT (ILS)

The contractor shall apply engineering and analytical disciplines required to implement ILS as a multi-functional technical management discipline associated with the design, development, test, production, fielding, sustainment, and improvement modifications of cost effective C^ISR and IT systems that achieve the warfighters' peacetime and wartime readiness requirements. The principal objectives of ILS are to ensure that support considerations are an integral part of the system's design requirements, that the system can be cost effectively supported through its lifecycle (from program initiation to system retirement), and that the infrastructure elements necessary to the initial fielding, operation and maintenance support of the system are identified and developed and acquired. Utilizing MIL-M-85337A and MIL-DTL-24784 as guidance documents, the contractor shall provide technical manual support; however, the majority of ILS includes supply support and provisioning, maintenance planning, support equipment, technical data, training, facilities, packaging, handling, storage and transportation, manpower, and design interface, computer resources, Production Based Logistics and Supply Chain Management and depot management.
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3.14 SYSTEM SAFETY ENGINEERING SUPPORT

The contractor shall apply engineering and analytical disciplines to ensure that safety is considered in all aspects of design, development, operation, maintenance, and modification of C4ISR and IT systems and platforms. This includes system health and hazard assessments and analysis and pollution prevention.

3.15 TRAINING SUPPORT

The contractor shall apply engineering, analytical, and applicable training disciplines required to ensure that the warfighter and technical support community is provided with adequate instruction including applied exercises resulting in the attainment and retention of knowledge, skills, and abilities regarding the warfighting capabilities, platforms and the C4ISR and IT systems they operate and maintain.

3.16 CONFIGURATION MANAGEMENT (CM) SUPPORT

The contractor shall apply engineering and analytical disciplines to identify, document, and verify the functional, performance, and physical characteristics of systems and associated interface systems, to control changes and non-conformance, and to track actual configurations of systems and platforms. Using MIL-HDBK-61A as guidance, the contractor shall provide support that includes all activities related to CM planning, baseline management, configuration identification, configuration audits, formal reviews, engineering changes, and configuration management records and reports; and the use of automated tools to perform these functions.

3.17 PROJECT QUALITY ASSURANCE (QA) SUPPORT

The contractor shall apply engineering and analytical disciplines to ensure that the processes and products used in the design, development, fabrication, manufacture and installation result in quality products. This area also includes the development and adherence to quality management plans in accordance to best industry practices.

3.18 OPERATIONS AND TRAINING EXERCISE SUPPORT

The contractor shall apply technical and administrative disciplines and skills to provide systems operation support services including support for standard/common/migration applications or systems. Activities include application/system and network administration services, maintenance of documentation related to system and network operations, routine system problem identification and correction, LAN/WAN administration and any other operational duties and training exercises associated with the SPAWAR mission. Support may also include providing applications and systems modification, testing, installation and ongoing quality assurance activities.